

the Effects whereof might otherwise have proved as fatal as the other is found to be beneficial.

I have only to add, that this poisonous Kind of Apocynum is now cultivated by several curious Persons about *London*, and that I design with all convenient Speed to present this Society with a particular Description thereof, taken from a Plant which I had last Summer growing in my own Garden.

VI. *An Account of a Book entituled, Hesperii & Phosphori Nova Phœnomena, &c. Authore Francisco Blanchino ; by John Hadley, Esq: R. S. V. Præs.*

THE Design of this Treatise, is to give an Account of some new Astronomical Discoveries relating to the Planet *Venus*, which the Author disposes under four Heads ; *viz.*

1. The Description of the dusky Spots observed in her Disk.
2. Her Rotation round an Axis, the Position of which is determined by the apparent Motion of those Spots, together with the Time of her Revolution.
3. The Parallelism of that Axis to it self in all Parts of the Planets Orbit.
4. Observations in order to determine the Horizontal Parallax of *Venus*, and consequently those of the Sun and other Planets.

He takes Notice of five remarkable Spots in her whole Surface, the two smallest of which are placed, one near each Pole, the other three lie along the *Æquator*, and cover good Part of a Zone, extended to about 30 Deg. of Latitude on each Side. He represents them to be much like the larger dark Spots in the Moon, which are usually called *Seas*, but considerably fainter, so as not to be easily discernable even to a sharp-sighted Observer, without the Assistance of a Telescope, capable of representing distinctly the Planet under an Angle equal at least to that under which the Moon appears to the naked Eye, and with an Aperture of 3 or 4 Inches of the *Roman* Palm. He then proceeds to give the Description of a Machine contrived by him to represent to the Sight the Motion of the Earth and *Venus* in their Orbits, and by the Means of a Lamp placed in the Center, to shew the Phases of the Planet, and Appearance of the Curve Lines described by the Revolutions of the Spots round the Axis.

This Revolution he makes greatly different from those of the Earth and *Mars* (the two Bodies next in order of the Planetary System) both in the Position of the Axis and Time of the Period. He places the *Colurus Solstitiorum*, or Plane, passing through the Axis of the Planet and Tropical Points of its Orbit, about the 20th Degree of *Leo* and *Aquarius*, and gives the Planes of its *Æquator* and *Ecliptick* an Inclination to each other of about 75 Degrees. He determines the Time of the Revolution to be about 24 Days and 8 Hours, instead of 23 Hours, as it has been generally taken to be from some Observations made by Mr. *Cassini* in
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the Years 1666 and 1667, but which he himself did not seem much to rely on. Now, both these Periods may be very consistent with the same Observations, provided that one of the Observers did not continue his Observations for any considerable Time at once. For if the exact Situation of any Spot be observed at any given Hour one Day, and at the same Hour the succeeding Day be found advanced about 15 Degrees or $\frac{1}{4}$ of the whole Revolution, it may still remain doubtful, whether the Spot has moved only thro' those 15 Deg. in that Day, or has made one or more entire Revolutions besides in that Time. This the Author was aware of, and therefore waited for an Opportunity of attending to the Motion of a Spot as long at once as the Vicinity of *Venus* to the Sun would admit of. Accordingly, *Feb. 26, 1726*, a little after Sunset, he observed a Spot near the Center of her Disk, where their Motion is most perceptible in a short Time, and about 3 Hours after, perceived the same Spot not sensibly removed; from which he concluded, the Period of its Revolution could not be so short as one Day, since, if it were so, the Change of Place of the Spot must have been very sensible in that Time. It were to be wished the Author had had Opportunities of confirming this Period by more Observations, especially since it was necessary to begin them soon after Sunset, and continue them till *Venus* was near the Horizon; the Strength of the Twilight in the first Case, and the Thickness of the Atmosphere through which the Planet must be seen in the latter, rendering the Observations very difficult.

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The next Article of his Observations, is the Continuance of the Axis in the same Parallelism, through the whole Orbit of the Planet. This is so necessary and obvious a Consequence of the established Laws of Motion, that there needs no more to be said about it.

The 4th Article contains an Account of some Observations made to determine the Parallax of *Venus* in the Year 1716: The Method he used for this Purpose, was to take the several Distances of Time between the Appulse of the Limb of *Venus* and of *Regulus* (which Star she pass'd by about that Time) to a horary Circle very near the Meridian, and to another about 6 Hours after, which he measured by the Pulses of a Watch, of which 143 went to 1 first Minute of Time. He likewise observed the Alteration of those Distances taken at the same Hour several Days one after another, and allowing a proportional Alteration for the Time between the two Observations, he computed what the Difference of their right Ascension ought to have been in the latter of them, if there were no Parallax; then comparing this Difference with that observed, he concluded the Disagreement to be the Parallax of right Ascension. This Method the Author seems to depend on so much, as to think that an equal Degree of Exactness is hardly to be expected from any other hitherto practised: But if we consider that the whole Parallax of right Ascension amounts by his Observations to no more than 4 Pulses of his Watch, and that he allows a Possibility of an Error of near one of those Pulses in taking each of the Transits, it is evident that if such an Error be actually committed in each of the Observations on which the finding of the Parallax depends, and all of them hap-

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pen to conspire the same Way, the Result of all together may possibly be greater than the whole Parallax found. Upon the whole, he makes the Horizontal Parallax of *Venus* at that Time to have been $24'' 20'''$, and that of the Sun $14'' 18'''$; but as he takes no Notice of the Latitude of the Place in deducing the Horizontal Parallax from that of right Ascension, they both ought to be encreased on that Account by about $\frac{1}{3}$, or in Proportion of 3 to 4. If therefore there be no other Mistake in his Numbers, the Horizontal Parallax of the Sun, as deduced from his Observations, should be about $19''$.

He concludes with giving some Cautions to those who may attempt hereafter to repeat these Observations, both in Regard to the Time proper for it, and the Choice and Constitution of the Telescope to be made use of. For greater Ease of the Observer, there is at the End a double Table, containing the Heliocentric and Geocentric Motions of *Venus* for eight Years; after which Space of Time, the Earth and *Venus* return very nearly to the same Situation. In this Table he says are marked the most convenient Times for observing; but these Marks, by some Oversight, are omitted in the Table.

For a Telescope of 100 *Roman* Palms he allows an Aperture of 3 or 4 Inches of that Palm, with an Eye-glass whose focal Length may be from 7 to 11 of the same, but what he directs in longer Instruments to increase the Breadth of the Aperture and focal Length of the Eye-glass in the same Proportion with the Instrument, must certainly be the Effect of some Mistake: For in this Case, a longer Telescope will magnify no more than the shorter, but only have the

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Strength of Light in the Object encreased in Proportion to the Square of the Length.

At the End of the Treatise is subjoined a Letter from the Reverend Father *Melchior à Briga*, &c. to the Author, giving an Account of some former Attempts to discover the Revolution of this Planet round its Axis, by Mr. *Cassini*, *De la Hire*, &c. consisting chiefly of an Extract of a Letter from Mr. *Cassini* to Mr. *Petit*, printed in the *Journal des Sçavans*, 1667, Tom. ii. Edit. *Amst.* The 2d and 3d Figures which are referred to in this Letter, are inverted by the Engraver, who copied them from the Original.

VII. *Observations on a Treatise wrote by Mons. Helvetius of Paris, designed to prove that the Lungs do not divide and exspand the Blood, but that on the contrary, they cool and condense it. By F. Nicholls, M. B. Præl. Anat. Oxon & F. R. S.*

THE Matter in Question between the Author and Signior *Michellotti* is, whether the Lungs cool and condense the Blood, according to the Opinion of the Antients, or whether they mix, attenuate, and of Consequence expand it, according to the System of Dr. *Pitcairn*.